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V.G.

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/472,876	06/07/95	GARCIA	A TRD-001-IA

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LM01/0225

EXAMINER

MEI, X

ART UNIT PAPER NUMBER

2747

25

DATE MAILED: 02/25/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action SummaryApplication No.
08/472,876Applicant(s)
Garcia et al.Examiner
Xu MeiGroup Art Unit
2747☒ Responsive to communication(s) filed on Dec 11, 1998☐ This action is **FINAL**.☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims☒ Claim(s) 2, 5, 9, 14, 15, 17, 18, 24, 28, 29, 31, 33-35, 37, 38, 43, and 44 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.☒ Claim(s) 14, 15, 17, 18, 29, 31, 33-35, 37, 38, 43, and 44 is/are rejected.☒ Claim(s) 2, 5, 9, 24, and 28 is/are objected to.☐ Claims _____ are subject to restriction or election requirement.**Application Papers**☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.☐ The drawing(s) filed on _____ is/are objected to by the Examiner.☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.☐ The specification is objected to by the Examiner.☐ The oath or declaration is objected to by the Examiner.**Priority under 35 U.S.C. § 119**☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.☐ received in Application No. (Series Code/Serial Number) _____.☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).**Attachment(s)**☒ Notice of References Cited, PTO-892☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____☐ Interview Summary, PTO-413☐ Notice of Draftsperson's Patent Drawing Review, PTO-948☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. This communication is responsive to the applicant's amendment dated 12/11/1998.
2. The indicated allowability of claims 35, 37, 14, 15, 28, 38 and 44 are withdrawn in view of the newly discovered reference(s) to Op de Beek et al., Audio Cyclopedia and Furui. Rejections based on the newly cited reference(s) follow.
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 31, 33-34, 43, 35, 37, 14, 44 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Op de Beek et al. (US Pat. 4,845,758, hereinafter, Beek), Audio Cyclopedia or Furui.

Regarding claims 31, 33-34, 43, 35-37, 14, 44 and 40, each of Beek (Fig. 12), Audio Cyclopedia (Fletcher-Munson curve on page 22) or Furui (Figs. 3.1 and 3.2) discloses the output response of a circuit, which received an input audio

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signal from a source, such that when the input audio signal having a band of frequencies with a high end and a low end is transmitted therethrough, the input audio signal is distorted so as to increase in amplitude as per increasing frequencies from a reference frequency up to an amplitude peak at a high frequency, and after the high frequency, decrease in amplitude as per increasing frequencies toward the high end, and the reference frequency separates the band of frequencies into a band of high frequencies and a band of low frequencies, whereby an enhanced audio signal is produced such that audible sound reproduced from the enhanced audio signal exhibits a perceptively improved harmonic quality and sound source separation compared to the audible sound reproduced from the input audio signal.

Fig. 12 of Beek with reference frequencies of f_2 or f_4 , for example, can serve as the midpoint from which the response increases in either direction to a peak and then fall off as described in claims 31, 33-34, 43, 35-37, 14, 44 and 40.

The standard Fletcher-Munson equalization curve is used to ensure equal subject loudness at all frequencies for listeners. When implemented in any real system, would have produced the response with frequency below 50 Hz goes to zero as does the response somewhere above the frequency of 15 + kHz, as the results described in claims 31, 33-34, 43, 35-37, 14, 44 and 40.

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As to Furui text and Figs. 3.1 and 3.2, ordinary formant synthesis feeds noise into bandpass filters to synthesize consonants (unvoiced sounds). The formant peaks are implemented with filters (BPF's) and fed alternately with tonal or broadband noise. The results of the frequency response as shown in Fig. 3.1 is as described in claims 31, 33-34, 43, 35-37, 14, 44 and 40.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 15 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beek or Audio Cyclopedia or Furui.

Regarding claims 15 and 38, recording/transmitting the enhanced audio signal taught by Beek or Audio Cyclopedia or Furui as recited above to a recording medium or other locations for later playback purpose would have been obvious to one of ordinary skilled in the art.

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7. Claims 24, 2, 5 and ²⁸9 are objected to as being dependent upon a rejected claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Any response to this action should be mailed to:

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or faxed to:

(703) 308-9051, (for formal communications intended for entry)

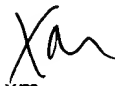
Or:


(703) 305-9508 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is (703) 308-6610.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.


xm
02/16/1999


FORESTER W. ISEN
PRIMARY EXAMINER
ART UNIT ~~2647~~ 2747